

- |  |                                 |
|--|---------------------------------|
| 11. Spores large, $11-13 \mu \times 4-5 \mu$ . | <i>C. aurifolius</i> Pk.        |
| Spores smaller, $7-8 \mu \times 4-6 \mu$ .     | 12.                             |
| 12. Stipe long, 5-8 cm.                        | <i>C. cinnamomeus</i> (L.) Fr.  |
| Stipe short, $1\frac{1}{2}-2\frac{1}{2}$ cm.   | <i>C. Sintenisii</i> Bres.      |
| 13. Stipe white.                               | <i>C. appendiculatus</i> Johns. |
| Stipe concolorous.                             | <i>C. lutescens</i> Pk.         |

## HYDROCYBE

1. Pileus somewhat fleshy, margin incurved when young; stipe attenuate above.  
Section *Firmiores*.
- Pileus submembranous, margin straight from the first; stipe subcylindric or attenuate below.  
Section *Tenuiores*.

*Firmiores*

- |  |                                     |
|--|-------------------------------------|
| 1. Stipe white, cortina colored like pileus.               | 2.                                  |
| Stipe and lamellae violaceous.                             | 3.                                  |
| Stipe and subobsolete veil yellow or reddish.              | 4.                                  |
| Stipe brown; cortina white or pallid; lamellae dark.       | 5.                                  |
| 2. Lamellae at first pallid.                               | <i>C. armeniacus</i> (Schaeff.) Fr. |
| Lamellae at first violaceous.                              | <i>C. regularis</i> Pk.             |
| 3. Stipe smooth, glabrous.                                 | <i>C. castaneus</i> (Bull.) Fr.     |
| Stipe fibrillose.  | <i>C. fusco-violaceus</i> Pk.       |
| 4. Small; pileus 1-2 cm.; in pastures.                     | <i>C. vernalis</i> Pk.              |
| Larger; pileus $2\frac{1}{2}-4$ cm.; in woods.             | <i>C. pulcher</i> Pk.               |
| 5. Small; pileus $1-3\frac{1}{2}$ cm.; on ground in woods. | <i>C. praepallens</i> Pk.           |
| Large; pileus 10 cm.; on logs.                             | <i>C. rubidus</i> Mont.             |

*Tenuiores*

- |  |                                 |
|--|---------------------------------|
| 1. Pileus bay-brown, disc darker.        | <i>C. decipiens</i> (Pers.) Fr. |
| Pileus pale alutaceous, darker when dry. | <i>C. pallidus</i> Pk.          |
| Not able to place                        | <i>C. venosus</i> Johns.        |

NEW YORK BOTANICAL GARDEN.

## PETIOLATE CONNATION IN TRIFOLIUM PRATENSE

BY CHARLES A. WHITE

Among the autumn stools of *Trifolium pratense* growing upon my house-lot in Washington I discovered in October last a leaf consisting of five leaflets and an unusually strong petiole. It was the fifth and innermost one of the five leaves which were then borne upon one of the six sprouts constituting the stool. All the other leaves of that stool, and all those of the many other stools which I examined bore only the normal number of three leaflets each. Supposing this leaf to have been a foliate variation similar to that which has become the race character of Professor

de Vries's *T. pratense quinquefolium*, I potted the whole stool upon which it grew for further observation. The following remarks, however, refer only to the leaves of that sprout which bore the leaf with five leaflets just mentioned. A few days after the plant was potted a new leaf, number 6, appeared from between the infolded stipules of number 5 and upon the same side of the axis of the sprout. This leaf consisted of six leaflets and, like number 5, it had a strong petiole with a shallow median groove along its upper side; and a cross section showed that the internal canal was double. Number 7 soon came out on the opposite side of the sprout and bore only three leaflets. Number 8 came out on the same as numbers 5 and 6, bearing six leaflets upon a petiole like that of each of those numbers. Only these three abnormal leaves appeared and they were preceded and followed by normal leaves on the sprout that bore them. The structure of the petiole of each plainly shows connation, and it necessarily follows that the leaflets in excess of three were not supernumeraries, but normal leaflets of one of the two petioles which are thus represented. The double character of these three petioles was easily traceable from the leaflets to the stipules but there it disappeared, and I found no trace of duplication of the stipules. The connation in number 6 extended to the two middle petiolules of the leaflet cluster and also to the lower part of the two leaflet blades which they bore; but in numbers 5 and 8 all the leaflets and petiolules were fully separate. I assume that one of the leaflets of number 5 was aborted. These three abnormal leaves are evidently monstrosities and not such cases of true multiplication of leaflets as occur in *T. pratense quinquefolium* and in ordinary four-leafed clover. The leaves here referred to, numbers 5, 6, 7, and 8, are preserved in the herbarium of the U. S. National Museum.

WASHINGTON, D. C.,  
November, 1902.

## REVIEWS

### A new Index to Botanical Literature

Under the auspices of the Royal Society of London, an International Catalogue of Scientific Literature was begun with the opening of the twentieth century. The first issue of Section